

The official in charge during his experience in 20 or more tropical storms has rarely seen such implicit obedience to the display of hurricane warnings. No ship, however staunch, wished to challenge the storm's fury, and one passenger ship returned to port after a short contest with high winds and mountainous seas. It is unquestionably true that the small property loss, as well as the small loss of life afloat, was due to the alertness in the distribution of warnings and a general observance of the same by all concerned. Expressions of appreciation and complimentary remarks on the efficiency of the bureau have been of frequent occurrence.

The official in charge at Miami reports as follows:

The damages in the Miami district from the storm amounted to about \$150,000, the greater part of which represents the loss to the avocado crop. The next greatest loss was sustained by telegraph, telephone, and electric light companies. A considerable loss also resulted from the destruction of awnings. Several houseboats and barges on Biscayne Bay that had not been taken to safe anchorage were sunk. Most of the craft in Biscayne Bay, including large dredging equipment, heeded the Weather Bureau warnings and escaped injury. Owing to the poor exposure of the anemometer at this station, the maximum wind velocity recorded, 33 miles per hour, does not represent the true wind velocity. It is estimated that the wind reached a velocity of 50 miles per hour on Biscayne Bay and at Miami Beach.

Very little damage was done by the storm after it passed north of Jacksonville. At Charleston, S. C., a few small boats were sunk, signs were blown down, and a few plate-glass windows were broken.

No other storm of marked intensity crossed the Washington forecast district during the month.—*C. L. Mitchell.*

CHICAGO FORECAST DISTRICT

The few special weather warnings issued in July, 1926, concerned shipping interests on the Great Lakes, with the exception of a warning for possibly light frost in the cranberry districts of Wisconsin on the 12th. The frost warning was verified at two of the three special cranberry stations, and the third station reported a bog minimum temperature of 33°. Advices were also sent to the cranberry interests on the 10th and 13th to the effect that while low temperatures would prevail on those nights frost was not likely. The ensuing conditions occurred as forecast.

Four disturbances of more or less importance affected the Great Lakes during the month. A few winds of storm force occurred in this connection, but they were mainly thundersqualls or winds resulting from a sudden shift as the center of the disturbance passed the meridian of the station. In all cases the duration was brief. Except in one instance, small-craft warnings were issued for these disturbances. The exception was a storm warning for extreme western Lake Superior on the night of the 8th, when the first disturbance of the month was approaching the Great Lakes. This was a slow-moving storm from the northwest that steadily deepened as it advanced, so that when the upper Mississippi Valley was reached the barometer had fallen to an unusually low point for midsummer. In fact, the lowest reduced pressures of record for July occurred over a wide area. At Chicago the reading was 29.42 inches.

Special service was given in connection with the national balloon race held on the 13th at Chicago, at the time of the Elks National Convention, and we have been advised that the winner owed his success to using the weather reports and forecasts that were furnished each of the pilots.—*C. A. Donnel.*

NEW ORLEANS FORECAST DISTRICT

Moderate weather conditions prevailed throughout the district during the whole month. No storm warnings were issued and no general storm occurred on the west Gulf coast.—*I. M. Cline.*

DENVER FORECAST DISTRICT

The usual midsummer moderately low pressures prevailed over most of the Rocky Mountain region during the greater part of the month, with frequent generally light showers and thunderstorms, especially in the northern and eastern portions of this district.

Daily weather and temperature forecasts which contained predictions as to wind direction and velocity in New Mexico and Arizona were sent to the district forester, Albuquerque, N. Mex., from the 1st to the 15th, inclusive, and wind forecasts during the same period were included in the forecast telegram to the official in charge, Santa Fe, N. Mex. Daily forecasts of weather, temperature, and wind direction and velocity for western Montana were also sent to the official in charge, Spokane, Wash., to be used in forest-protection work.

No special warnings were required during the month.—*J. M. Sherier.*

SAN FRANCISCO FORECAST DISTRICT

The month was marked by a continuation of temperatures above the normal over practically all interior sections and by subnormal precipitation. Consequently, many warnings for fire-weather conditions in the forests were issued. Fires were frequent as a result of the prevailing wind, temperature and humidity conditions. Many of them were man-made but a number were caused by electrical discharges in the forested areas in the mountains. No storm warnings were issued; none were required.

The demand for citrus fruits during the summer months is largely governed by the weather conditions. A warm wave over the Middle Western and Eastern states, the principal consuming sections, brings about a greatly increased demand for lemons and oranges. Naturally the California Citrus Growers Exchange is interested in information of impending hot waves over these areas, in order to meet this increased demand. On the 16th the following information was sent to Mr. E. G. Dezell, general manager of this organization: "Weather chart indicates several days of warm weather over Middle Western and Eastern States." Acknowledging receipt of this advice, Mr. Dezell on the same date wrote as follows:

Thank you very much indeed for your flash wire this morning with reference to the indications for several days of warm weather over the Middle Western and Eastern States. This changes last week's forecast and is very acceptable from the standpoint of the market of both lemons and oranges and this early advice is very much appreciated.

—*E. H. Bowie.*

RIVERS AND FLOODS

By H. C. FRANKENFIELD

The only floods of importance during July were those in the Sulphur River. Intermittent rains following the 8th at intervals of a few days kept this stream near or above the flood stage at Ringo Crossing, Tex., from the 10th, and at Finley, Tex., from the 18th, to the close of

the month. Flood warnings were issued in time to prevent any loss of livestock or other movable property, the reported saving thereby being \$50,300. Unavoidable losses were estimated at \$53,500.

Reported losses in other districts were as follows: Trinity River, \$1,500; Cypress River, \$200; Tar River, reported as "considerable above Louisburg, N. C."

An effect of the deficient snowfall and subnormal precipitation of the winter and early spring in the Pacific Northwest appeared in the unusually low maximum stages reached during the annual rise in the Columbia River. These stages, for all stations, were the lowest summer crests of record. Comparative data follow:

Station	Summer maximum this year	Previous lowest summer maximum	Previous highest maximum
Marcus, Wash.	19.8	27.5 in 1919	44.7 in 1894
Umatilla, Oreg.	11.9	13.6 in 1915	34.5 in 1894
Celilo, Oreg.	8.9	10.5 in 1915	23.4 in 1903
The Dalles, Oreg.	17.1	20.8 in 1915	59.4 in 1894
Cascade Locks, Oreg.	12.9	14.7 in 1889	49.7 in 1894
Vancouver, Wash.	9.9	12.6 in 1915	34.4 in 1894
Portland, Oreg.	9.7	10.0 in 1889	33.0 in 1894

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
ATLANTIC DRAINAGE					
Tar, Rocky Mount, N. C.-----	<i>Feet</i> 9	29	30	<i>Feet</i> 10.2	29
Santee, Rimini, S. C.-----	12	31	(1)	-----	-----
MISSISSIPPI DRAINAGE					
Solomon, Beloit, Kans.-----	18	13	15	21.0	15
Canadian, Logan N. Mex.-----	4	-----	-----	5.0	24
Sulphur:					
Ringo Crossing, Tex.-----	20	10	19	25.0	16
Finley, Tex.-----	24	22	30	23.4	28
		17	24	26.1	19-20
		29	(1)	-----	-----
Cypress, Jefferson, Tex.-----	18	19	20	18.5	20
WEST GULF DRAINAGE					
Trinity:					
Dallas, Tex.-----	25	15	17	27.1	16
		24	(1)	-----	-----
Trinidad, Tex.-----	28	16	23	33.6	21
Little, Little River, Tex.-----	30	23	23	34.4	23
PACIFIC DRAINAGE					
Colorado, Parker, Ariz.-----	7	(1)	24	10.2	June 12-13

¹ Continued at end of month.

² Continued from last month.

MEAN LAKE LEVELS DURING JULY, 1926

By UNITED STATES LAKE SURVEY

[Detroit, Mich., August 5, 1926]

The following data are reported in the Notice to Mariners of the above date:

Data	Lakes ¹			
	Superior	Michigan and Huron	Erie	Ontario
Mean level during July, 1926.				
Above mean sea level at New York.....	Feet 600.86	Feet 578.53	Feet 571.22	Feet 245.20
Above or below—				
Mean stage of June, 1926.....	+0.36	+0.12	±0.00	-0.11
Mean stage of July, 1925.....	-0.57	-0.01	+0.10	-0.01
Average stage for July, last 10 years.....	-1.43	-2.12	-1.47	-1.42
Highest recorded July stage.....	-2.96	-5.05	-3.19	-3.52
Lowest recorded July stage.....	-0.46	-0.01	+0.10	+0.61
Average departure (since 1860) of the July level from the June level.....	+0.21	+0.06	-0.04	-0.04

¹ Lake St. Clair's level: In July, 1926, 573.94 feet.

EFFECT OF THE WEATHER ON CROPS AND FARMING OPERATIONS, JULY, 1926

By J. B. KINCER

General summary.—Early in the month a reaction to warmer weather throughout the Central and Northern States promoted rapid growth of vegetation wherever there was sufficient soil moisture. The need for rain, however, had become urgent in a great many places, especially over a considerable area comprising the central and northern Plains and parts of the central valleys. By the 20th of the month good rains were needed over large areas, especially the interior valley States, parts of the South, and generally over the Northwest, with the drought severe in the central Plains and in the extreme lower Ohio Valley.

In the more western States irrigated crops made excellent growth, but the warm, dry weather exacted a heavy toll on irrigation water, and dry-land crops were unfavorably affected. About the close of the month a tropical storm passed inland from the Southeast, and heavy rains occurred in some sections of that area. While these were damaging to crops in a few sections, droughty conditions in the interior of the Southeast and also in most parts of the Ohio Valley were effectively relieved, while additional moisture in the middle Atlantic area was helpful.

Small grains.—The harvest of winter wheat made good progress under favorable weather conditions. At the beginning of the month cutting had advanced in the East well to the north of the lower Ohio River, and in the Plains States to southeastern and south-central Kansas. By the 20th, harvest had been about completed in the principal producing sections, and threshing was making good advance. The warm, dry weather in the Central-Northern States, however, was unfavorable for spring wheat and also for oats in many places. In general, the month was unfavorable for spring wheat, as rainfall was mostly of a local character and insufficient over considerable areas. Harvest was begun the latter part of the month in Minnesota and parts of North Dakota.

Corn.—The reaction to warmer weather early in the month was generally beneficial for corn, though it was too dry in some sections, especially in the lower Ohio Valley and central Plains States. The drought was largely relieved at about the close of the month in the former area, but continued in the central trans-Mississippi States. In Iowa early corn was damaged badly by heat and drought, especially in the Northwest, and much harm was done in parts of Nebraska and Kansas. In the Southwest the weather was generally favorable.

Cotton.—The weather was mostly favorable for the cotton crop, although moisture was needed in some interior southeastern districts, and there was too much rain in some sections, with considerable complaint of shedding, poor fruiting, and insect activity. The latter part of the month had rather less insect activity, but frequent rains over considerable areas, especially in the central and eastern portions of the belt, were unfavorable, and reports of poor fruiting were rather numerous.

Miscellaneous crops.—Pastures did well generally in the Northeast, but there was insufficient rain for grass lands in Central and Northern States between the Mississippi River and Rocky Mountains, and quite generally in the more western range country. Livestock, however, continued mostly in satisfactory condition.

Potatoes did well in the Southeast, while showers in the Ohio Valley and Northern States near the close of the month were beneficial. Gardens, truck, and minor crops in the interior States had insufficient moisture during much of the month.